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User manual for spot light

Version V1.0

PJ-0520-2

P
T

[8888]

CH   +   −

RS232

CH1   CH2
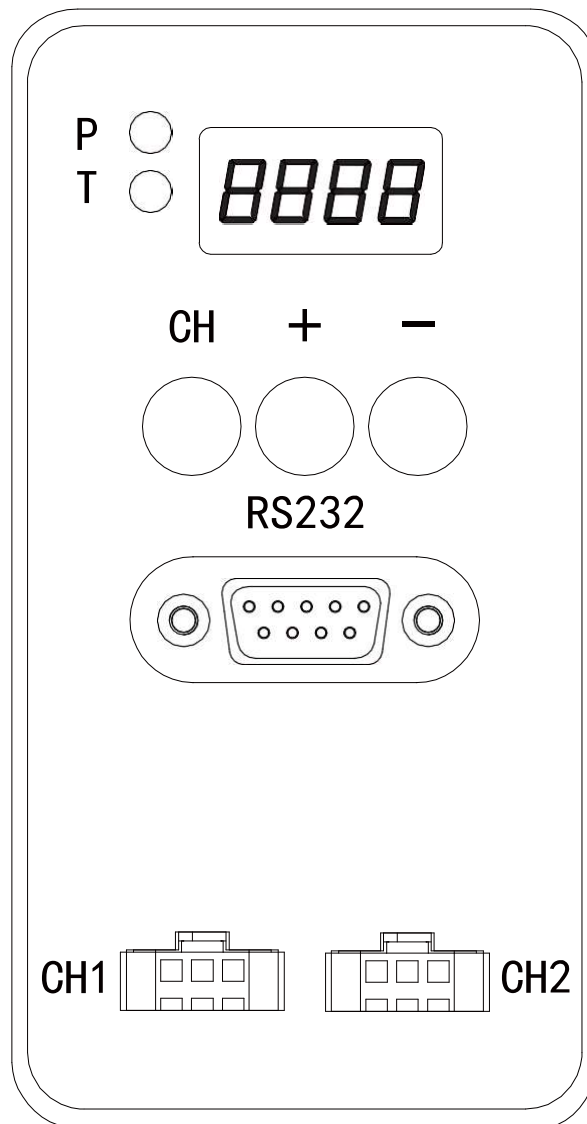
Version update record

Version	Date	Remark
V1.0	2020-8-25	New revision

◇   To avoid possible damage from electric shocks, remove the power cord from the power socket before moving the controller.

◇   When connecting other hardware devices to the controller, please cut off the input power supply of the controller. Please carefully check whether the input and output wires are connected correctly to ensure that the controller and peripheral devicesare working Reliably.

◇   Make sure that the voltage setting for the power supply has been adjusted to the voltage standard used in the country or region. If you are not sure about the supply voltage in your area, please consult the local power company nearby.

◇   To ensure safety and improve anti-interference, ensure that the ground wire of the input power supply is reliably grounded.

◇   To ensure that the trigger of the controller is stable and correct, ensure that the trigger input signal is electrically isolated from the device.
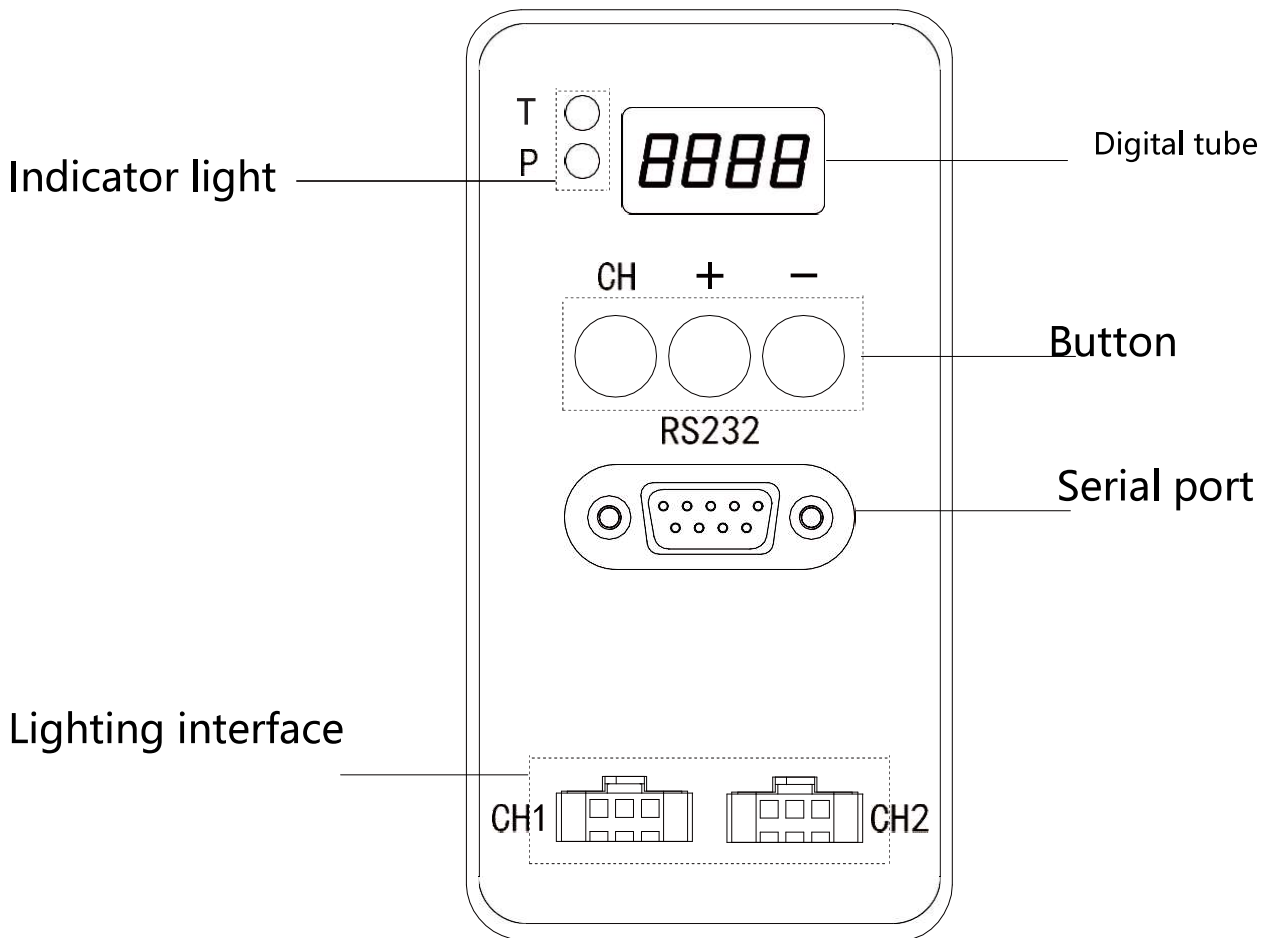
Operating safety instructions

◇   Please read the instructions carefully before using the product.

◇   Before using the product, please confirm the appearance and other quality of the product. If any major defects are found, please contact us as soon as possible.

◇   Please try to avoid using the controller in dust, high temperature and high humidity environment.

◇   Do not put the controller in a shaky place.

◇   Do not operate the controller with live wire.

Product features

1，Constant output to ensure stable brightness and Prolong the life of the lighting
2，256 degrees brightness can be set.button/RS232 to control brightness
3，The positive/negative trigger mode switching，could choose the working mode according to the requirements
4，External trigger input adopts high speed optocoupler design, high speed and reliability.
5，With power-down save function;

Product specification

Model	PJ-0520-2
Drive mode	Constant current
Light control mode	Variable current control
	Panel key/RS232
Input Voltage	DC 24V
Channel	2
Output Voltage	DC 5V
Max output voltage	680mA
Total power	20W
Output port	SMP-03V-BC（1：NC 2：output+ 3：output-）
External Trigger voltage	DC5-24V（current ≈5.6mA）
Trigger delay	＜20μs
Operating T&H	Temp：0～40℃、Humidity：20～85%RH（with no condensation)
Storage T&H	Temp：-20～60℃、Humidity：20～85%RH（with no condensation)
Cooling method	Natural cooling
Weight	170g or less
Overall size(mm)	50*68.9*95.9

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Indicator light

Digital tube

CH + −

Button

RS232

Serial port

Lighting interface

CH1   CH2

Item	Instruction
Digital tube	The first digit from the left is the channel for currently operation, and the last three digits are the corresponding values for currently operation
Button	CH is for channel and function switch，Long press for functionswitch ,Short press for channel switch, H0 is positive trigger，H1 is negative trigger ＋ increase，- is reduce
Serial port	Communicate with PC device via RS232
Lighting interface	SMP-03V-BC interface，a total of 2 light output, each can be independently controlled
Indicate light	When the power is ON, the P light will be "ON", when the serial port has data exchange, The T light is "ON"

◇Press CH key to switch to the negative/positive mode

Mode setting	Operating
Negative trigger	Press the CH key，switch the digital tube display to H1
Positive trigger	Press the CH key，switch the digital tube display to H0

● Brightness level setting （0-255）

The fist digital is CH，the 2-4 digital is brightness level

Press CH to switch channels，Press "+" to increase

brightness, press "-" to decrease brightness

Digital mode

P ●
T ○ 8888

CH   Brightness

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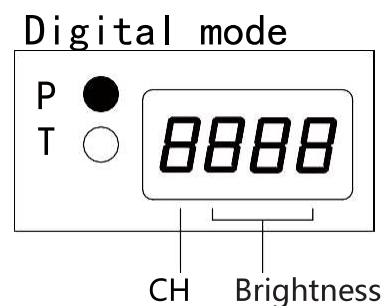
Negative trigger：When the external trigger receives a signal, the lighting OFF

Positive trigger：When the external trigger receives a signal, the lighting ON

Remark：In digital mode，the lighting ON/OFF time depends on the time of duration for the signal

Trigger Timing Example

● When in digital mode，trigger mode is level trigger，the mode is Negative/Positive trigger mode

Negative trigger mode	Positive trigger mode
Signal input Lighting output <20μs	Signal input Lighting output <20μs
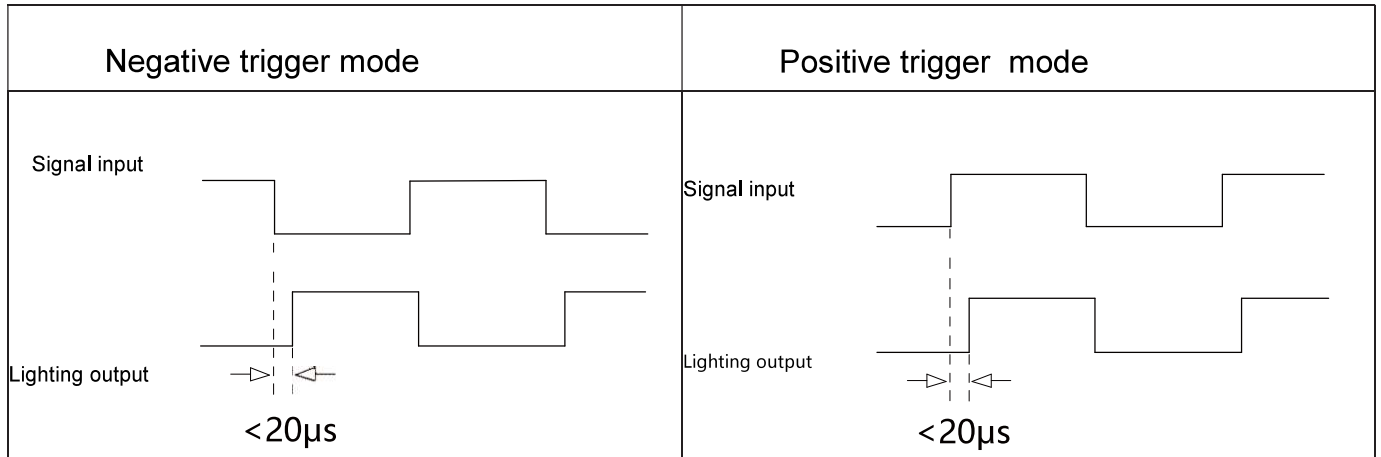
Remark：In negative trigger mode， If the controller not connect to an external trigger, the lighting always ON.

Wiring definition

Trigger port

CH1- CH1+ CH2- CH2+ NC NC GND DC24V

EXT TRI   Power
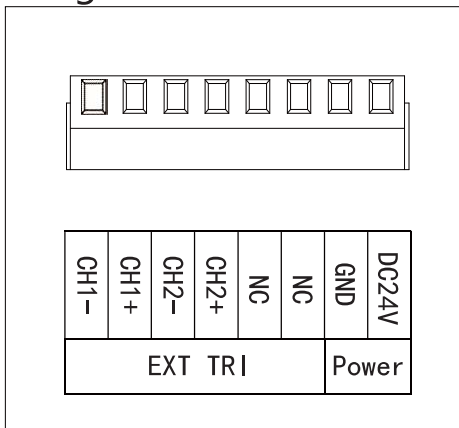
Port	definition
DC24V	power input positive
GND	power input negative
NC	reserved
NC	reserved
CH2+	CH2 external trigger input positive
CH2-	CH2 external trigger input negative
CH1+	CH1 external trigger input positive
CH1-	CH1 external trigger input negative

● The trigger voltage is DC5-24V

● The internal circuit adopts optocoupler isolation，ensure that the trigger signal will not affect the internal circuit of the controller

● Trigger circuit with constant current function，don't need for series resistance within the rated trigger voltage range

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| DC24V |
| GND |
| NC |
| NC |
| CH2+ |
| CH2− |
| CH1+ |
| CH1− |

Constant
current circuit
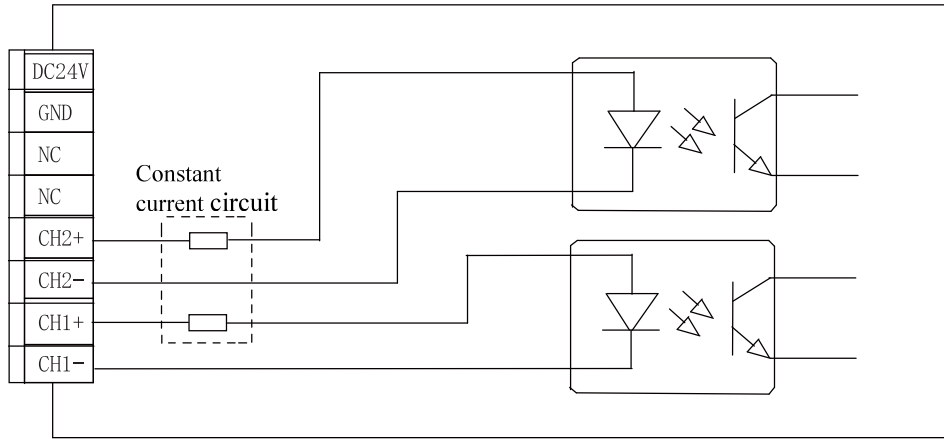
Controller internal trigger diagram

⚠ When triggering the wiring, it is forbidden to operate the controller with power on, so as to avoid damage to the controller

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Trigger Wiring Example

●NPN signal: common positive， control negative trigger,When the IO card outputs a low level, a trigger loop is formed to trigger the light source.

●PNP signal： common negative， control positive， When the IO card outputs a high level, a trigger loop is formed to trigger the light source.
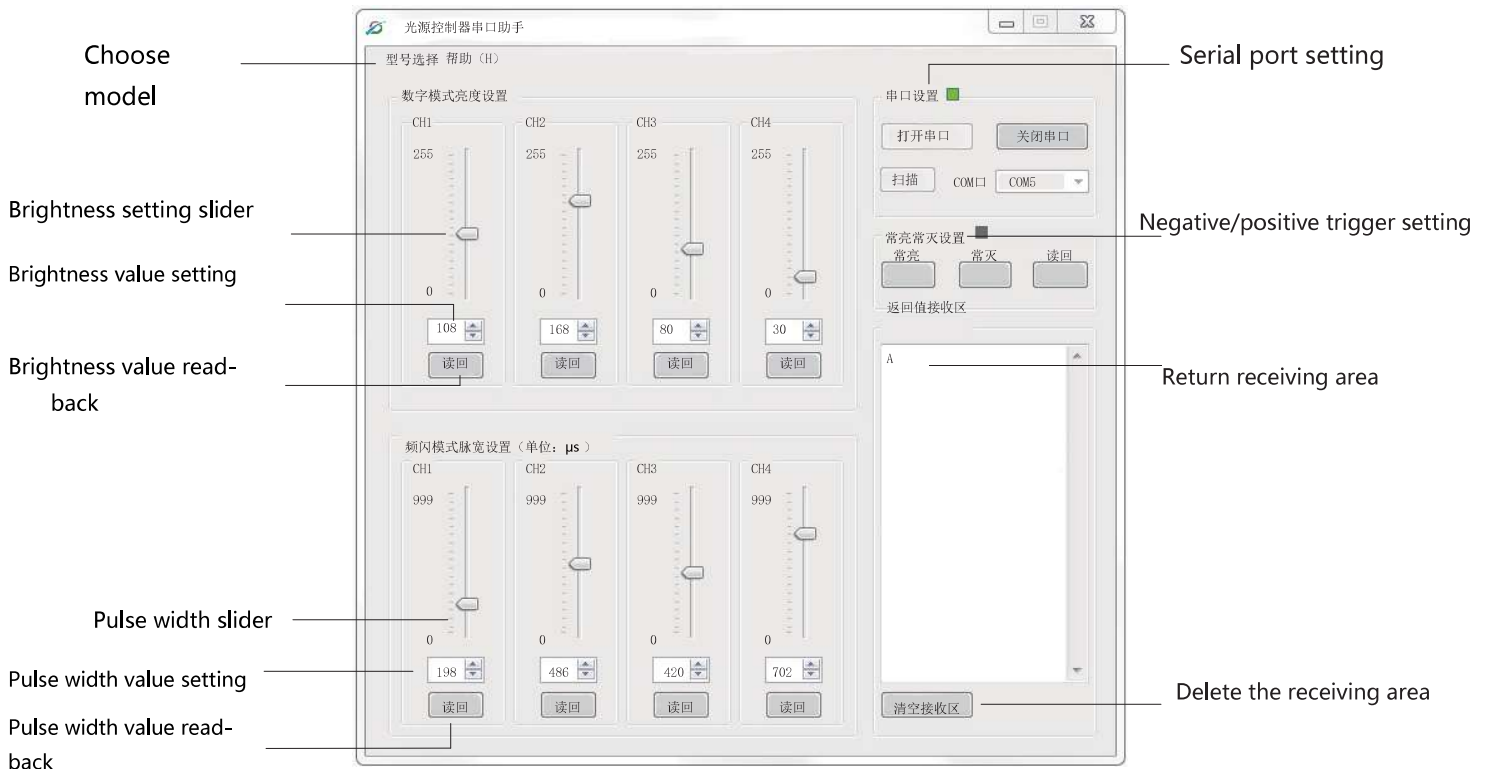
NPN signal   PNP signal
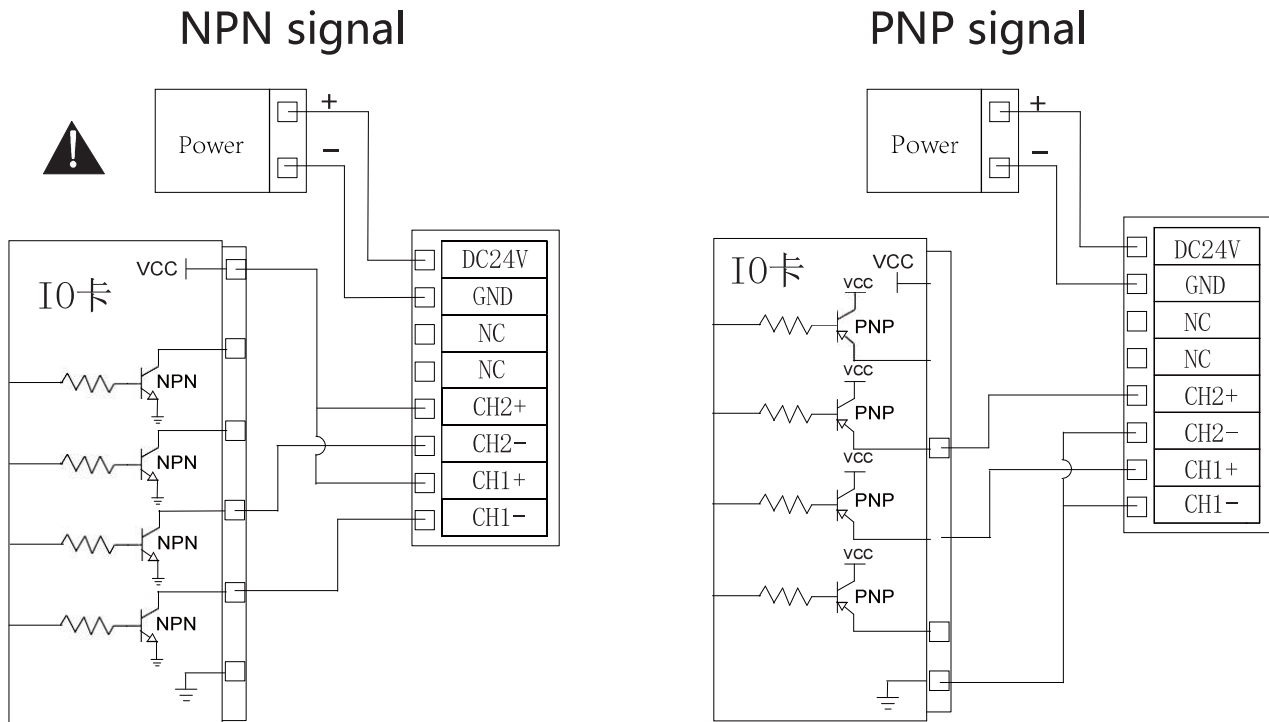
Pay attention to isolate of signal power and equipment power supply， otherwise it may interfere with thetrigger signal

●When the output signal of the IO card has a level, it can be directly connect
   to the controller
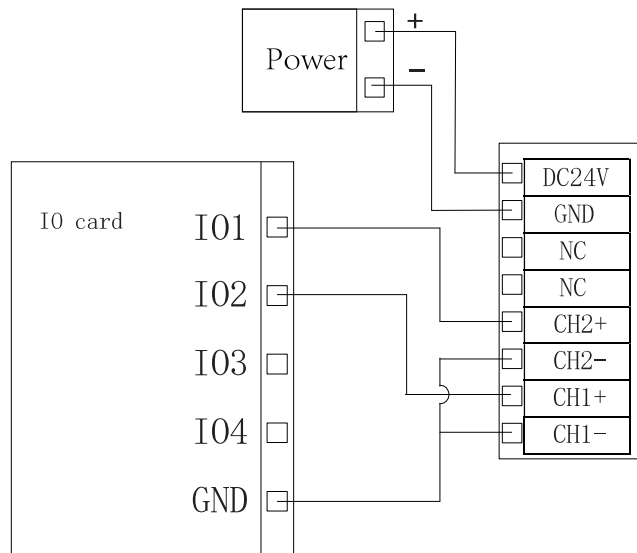
●When using the IO port output level trigger wiring method, please pay attention to the IO port output voltage.

Serial port communication

Choose model

Brightness setting slider

Brightness value setting

Brightness value read-back

Pulse width slider

Pulse width value setting

Pulse width value read-back

Serial port setting

Negative/positive trigger setting

Return receiving area

Delete the receiving area

Item	Instruction
Model choose	Choose the suitable controller model
Brightness setting slider	The brightness of each channel can be changed by pulling the slider
Brightness value setting	Select the channel and enter the brightness value in the box
Brightness value read-back	Reading single channel brightness level
Pulse width slider	The pulse width value of each channel can be changed by pulling the slider
Pulse width value setting	Select the channel and enter the pulse width value in the box
Pulse width value read-back	Reading single channel pulse width value
Serial port setting	Choose the suitable serial port, then serial port to communicate with the controller
Negative/Positive mode setting	Negative/Positive mode switch
Return receiving area	Display data return value
Delete the receiving area	Delete data return value

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Default Parameter

Baud rate:19200bps
Data bits：8bit
Stop bits：1bit
Check bits:/

Communication instruction list

● Setting brightness for digital mode

Starting character	Channel character	Data character	Stop character	Return value	Instruction
S	A-D	0000-0255	#	A-D	Brightness level 0-255

For example：Setting the brightness level for channel 1 to 125，sending SA0125#，return "A".

● Reading brightness for digital mode

Starting character	Channel character	Stop character	Return value	Instruction
S	A-D	#	a0000-a0255	The return value a-d corresponds to channel A-D

For example：Reading channel 2 with brightness level 136，sending SB# ，return "b0136".

● Setting negative/positive trigger mode

Starting character	Data character	Stop character	Return value	Instruction
T	H/L	#	h/l	"h" means negative trigger, "l" means positive trigger

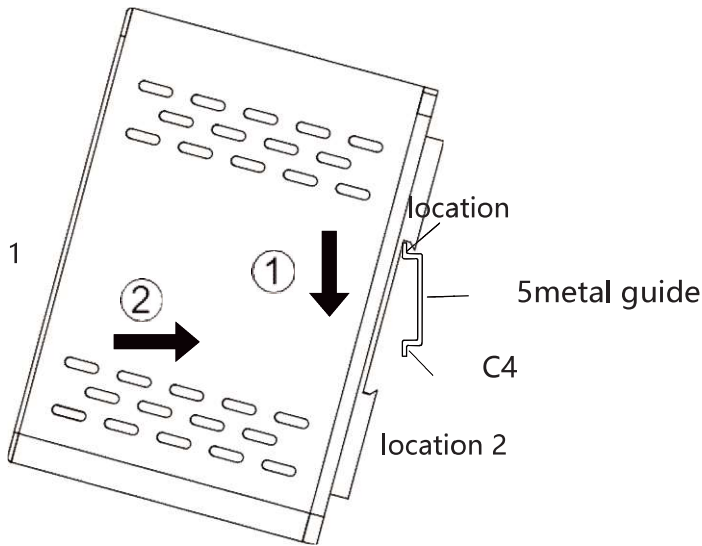For example：setting the controller with positive trigger mode ，sending "TL#" ,return "l")

● Reading negative/positive trigger mode

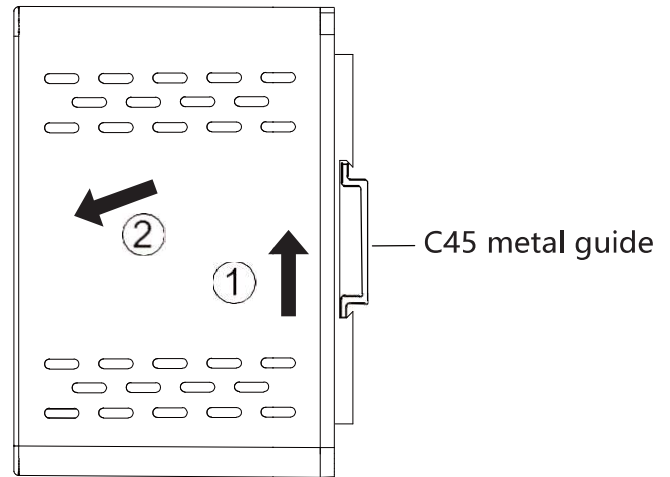| Starting character	Stop character	Return value	Instruction
T	#	H/L	"H" means negative trigger, "L" means positive trigger

For example：reading the controller with negative trigger model，sending T# , return H)

Remark：All communication commands are in character format

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DIN guide rail installation

location

1

① 5metal guide

②

C4

location 2

C45 metal guide

②

①

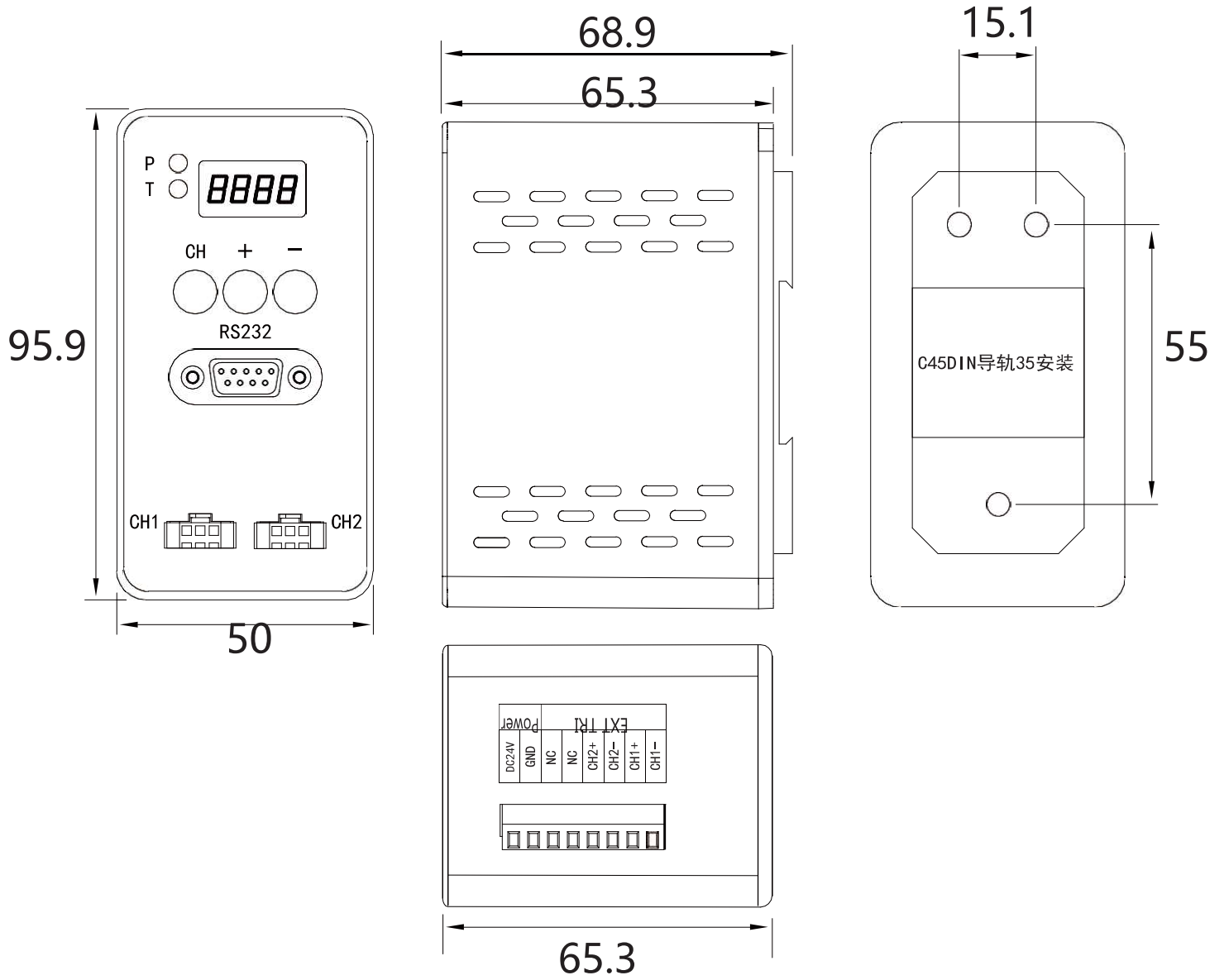### Installation   Remove

Installation step： Hook the hanging tab on the upper side of the controller to the DIN rail, While pressing the controller in the
direction of arrow 1, press in the direction of arrow 2 at the same time.

Remove stpe：   When removing from the DIN rail: Press the controller in the direction of
                          arrow 1, then pull out in the direction of arrow 2 .

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Unite:mm

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CH   +   −

RS232

CH1   CH2

50

55

C45DIN导轨35安装

Power   EXT TRI

DC24V | GND | NC | NC | CH2+ | CH2− | CH1+ | CH1−

65.3

Q: The controller is connected to the light source, but the trigger signal is not connected, and the light source does not light up.
A: Please check the settings as below

      1.please check if the lighting is suitable for the controller or not

      2.In digital mode, if setting it to negative trigger mode H1

      3.Whether the brightness level of the corresponding channel is setting too low

Q: Serial communication cannot connect to the computer
A: Please check the settings as below

      1.Please check if there is any problems with the serial communication line

      2.After connecting to the computer, if the selection of the serial port number of the computer is wrong

      3.If the Demo software couldn't be opened, please check if the ControllerDll file is missing

Q: The controller is triggered by an external signal, but the light source does not respond
A:Please check the settings as below

      1.Please check if the controller mode setting is wrong

      2.Check if the trigger wiring is wrong, refer to the above wiring method

      3.Check if the trigger voltage of the input signal is within the range of 5-24V

Q:The controller was trigger by external signal ,without trigger signal but the lighting is flash
A: Please check the settings as below

      1.Check if the signal source that triggers the controller is stable or not

      2.Check if there is a strong external interference source affecting the trigger signal